

REMARKS/ARGUMENTS

This is in full and timely response to the nonfinal Office Action dated August 24, 2007 (Paper No. 20070820). Reconsideration and withdrawal of the new grounds of rejection are respectfully requested in view of the following remarks.

Claims 2, 3, 5, 6, 24, 28, 29, 31, 32, 36, 37 and 51 remain pending in this application. No amendments are proposed at this time.

Rejection of Claims 24, 28 and 29 Based on Zantonelli et al. In View of Klint

Claims 2, 3, 5, 6, 24, 28 and 29 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Zantonelli et al. (U.S. Patent No. 4,952,312) in view of Klint (U.S. Patent Publication No. 2001/0044633). The Examiner contends that Zantonelli discloses the process as claimed, except for the aspect of winding a group of filaments. The Examiner relies upon Klint for a teaching of this feature. This rejection is respectfully traversed for the following reasons.

Zantonelli et al. discloses a method for winding the fibers of an exchange device, such as a blood oxygenator. The method includes winding a fiber 3 in several layers with a substantially constant winding pitch. The winding process is shown in Fig. 4 and includes a machine 15 that winds the fiber 3 around a core 16, which is rotated about a central axis by a motor 17. The fiber 3 is taken from a supply spool or bobbin 18 and guided in its path of winding onto the core 16 by a thread-guide 19, which reciprocates along a guide rail 20. The thread guide 19 is movable along the guide rail 20 by a motor 22 and shaft 21.

Zantonelli discloses in column 2, lines 22 to 24, that “several fibres may be grouped to form a strip or band which is wound along a generally-helical path around the core 2.” However, Zantonelli does not teach any particular process for grouping a plurality of fibers together into a strip or band, and does not illustrate any such process in the drawings. Indeed, Zantonelli states in column 2, lines 24 to 32, that the preferred and illustrated method is to form the filament winding from a single fiber wound in several layers around the core 2.

The Examiner relies upon Klint for a teaching of winding a group of filaments simultaneously, and particularly refers to paragraph Nos. 0015, 0020 and 0065 of Klint. The Examiner contends that it would have been obvious at the time of the Applicant’s invention to wind a group of filaments simultaneously in the process taught by Zantonelli, in view of the multiple filament teachings of Klint. However, neither of these references teach a guide assembly for winding a group of filaments simultaneously as claimed.

Klint discloses a medical device, such as a catheter, having a body portion 3 with a central longitudinally extending lumen 6 and a multiple filament helically wound row A of wires 5. The wires 5 are placed in a row next or closely adjacent to each other, and the group of wires is wound according to a desired pitch angle onto the body portion. Klint discloses a method of winding the wires 5 using a mandrel 7, as shown in Fig. 7 (see, e.g., page 3, paragraph 0049). After winding the wires 5 onto the mandrel 7, the coiled wires are heated to remove residual stresses from the wires. After the heat treatment, the mandrel 7 is then removed from the wires 5, leaving the wires 5 to maintain their positions. Although Klint does not describe or show a

guide assembly for guiding the wires 5 to the mandrel 7 during the winding process, it can be seen in Fig. 7 of Klint that the wires 5 are fed during the winding process to the outer surface of the mandrel 7 in a plane which is generally parallel to the longitudinal axis of the mandrel 7. Even if some sort of guide assembly is inherent in the teachings of Klint, such guide assembly is clearly not one with a filament engaging surface that “lies in a plane which is generally perpendicular to a longitudinal axis of the core member,” as claimed.

In contrast, the Applicant’s invention uses a guide assembly having a filament engaging surface that lies in a plane which is generally perpendicular to a longitudinal axis of the core member. The group of filaments leave the filament engaging surface of the guide assembly in a plane which is perpendicular to the core member. As the group of filaments make contact with the core member, the filaments naturally re-orient themselves by sliding against one another so that they form a uniform band of individual filaments that are tightly packed side-by-side as they are wrapped onto the core member.

To help the Examiner better appreciate the features and advantages of the Applicant’s claimed invention, a photograph of an actual catheter that has been wound with a group of filaments pursuant to the claimed invention is attached to this response. The catheter in the photograph has been wound with filaments but not yet coated with polymer. Each of the fibrous bundles shown in the photograph is actually eight 0.0005" diameter round wires. The wires appear as bands because they are tightly packed side-by-side.

The Applicant’s claimed invention provides a relatively simple, yet highly effective

method of forming a “band” of filaments on the core member. The Applicant’s claimed invention allows the filaments within a group of filaments to be positioned side-by-side and packed tightly against one another as the group of filaments are wound onto the core member. As a result, a high number of filaments can be laid in a single band.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw his rejection of claim 28 under 35 U.S.C. 103(a) based on Zantonelli in view of Klint. Further, claims 24 and 29 both depend, either directly or indirectly, upon claim 28, and are believed to be patentable for at least the same reasons explained above regarding claim 28.

Rejection of Claims 2, 3, 5 and 6 Based on Zantonelli et al. In View of Klint and Sarge et al.

Claims 2, 3, 5 and 6 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Zantonelli et al. in view of Klint, and further in view of Sarge et al. However, the Examiner does not explain what particular features or teachings of Sarge et al. are proposed to be combined with the teachings of Zantonelli in view of Klint, nor does he provide any meaningful statement of motivation to make the combination. Thus, it is respectfully submitted that the Examiner has not stated a *prima facie* rejection of these claims.

With regard to claims 2 and 3, Sarge et al. does not disclose the claimed step of anchoring a group of filaments to a core member at a proximal end of the catheter. Sarge et al. teaches the use of a single filament 300 in his winding, not a group of filaments as claimed. Sarge et al. also teaches securing the distal portion 192 of the filament 300 to the inner tubular member 30 at its distal end, not the proximal end as claimed.

If the Examiner intends to maintain this rejection, he is respectfully requested to provide an additional explanation as to which particular features or teachings of Sarge et al. are proposed to be incorporated into the method of Zantonelli et al. in view of Klint.

Further, the rejection of claims 2, 3, 5 and 6 are respectfully traversed for at least the same reasons explained above regarding the rejection of independent base claim 28.

Rejection of Claims 31, 32, 36 and 37 Based on Zantonelli et al. in view of Klint

Claims 31, 32, 36 and 37 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Zantonelli et al. in view of Klint. The teachings of Zantonelli et al. and Klint are explained above. This rejection is respectfully traversed for the same reasons set forth above regarding the rejection of independent claim 28.

Rejection of Claim 51 Based on Zantonelli et al. in view of Klint and Sarge et al.

Claim 51 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Zantonelli et al. in view of Klint and Sarge et al. The Examiner contends that Zantonelli et al. and Klint disclose the claimed invention, except for step of anchoring a group of filaments. The Examiner relies upon Sarge et al. for a teaching of anchoring a group of filaments. This rejection is respectfully traversed for the following reasons.

As explained above, the group of filaments 5 shown in Fig. 7 of Klint are oriented in a plane that is generally coplanar with (i.e., parallel to) the longitudinal axis of the mandrel 7, not perpendicular to the mandrel. For the filaments 5 in Klint to be in a plane which is perpendicular

to the longitudinal axis of the mandrel 7, they would need to be illustrated as stacked on top of one another in the vertical direction in the illustrated view of Fig. 7 (instead of side-by-side in the horizontal direction as shown). Zantonelli et al. also lacks any teaching or suggestion of this feature of the Applicant's invention.

Further, Sarge et al. does not disclose the claimed step of anchoring a group of filaments to a core member at a proximal end of the catheter. Sarge et al. teaches the use of a single filament 300 in his winding, not a group of filaments as claimed. Sarge et al. also teaches securing the distal portion 192 of the filament 300 to the inner tubular member 30 proximate its distal end, not the proximal end as claimed.

Conclusion

For at least the foregoing reasons, it is respectfully submitted that all of the pending claims in this application are patentable over the applied prior art, and that this application is now in condition for allowance. Early issuance of a Notice of Allowance is respectfully requested.

If the Examiner has any comments or suggestions that could place this application into even better form, the Examiner is encouraged to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted by:

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PATENT APPLICATION

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